



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,238	01/14/2005	Yoshihiro Hayashi	Q85704	8757
23373	7590	12/14/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				ZIMMER, MARC S
ART UNIT		PAPER NUMBER		
		1712		

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/521,238	HAYASHI, YOSHIHIRO
	Examiner Marc S. Zimmer	Art Unit 1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 January 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 4-6 is/are allowed.
 6) Claim(s) 1 is/are rejected.
 7) Claim(s) 2 and 3 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-6 in the reply filed on October 24, 2006 is acknowledged.

Claims 7 and 8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected apparatus, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 24, 2006.

Claim Analysis

The claims are, in the Examiner's estimation, unnecessarily verbose and perhaps would benefit from some revision. The Examiner respectfully submits that Applicant might consider rewriting claim 1 so as to read,

1. An organosiloxane copolymer film derived from at least a first organosiloxane with a cyclosiloxane backbone and a second organosiloxane with straight-chain siloxane backbone; and wherein the film acquires a bridge structure with the straight chain organosiloxane forming bridges between the cyclosiloxane units.

Applicant is not required to amend the claim in precisely this manner. Alternative language is offered only to provide a more concisely written equivalent of Applicant's claim. However, Applicant is at least required to replace the word "comprises" in line 4 of claim 1 with "prepared/derived from" or some other alternative. Generally speaking, it is improper to state that a polymer "comprises" a monomer because that monomer has undergone chemical change when integrated into the polymer.

The word "ratio" as recited in the context of being a "content ratio" should be removed wherever it appears in the claims. The word "content" is sufficiently clear to define this aspect of Applicant's invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Rose et al., U.S. Patent Application publication No. 2004/0033373. See the figure on the cover page of the document, and also paragraphs 27, 29, 42, and 44.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Cho et al., U.S. patent # 6,486,082. See column 2, lines 46-51 and the paragraph bridging columns 3 and 4.

Allowable Subject Matter

Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 4-6 are allowable.

Though stated in different terms, Applicant's invention is essentially a gradient film prepared by vapor deposition of two different siloxane precursors of defined structure ostensibly by varying the flow rate of each precursor as deposition proceeds. Flow rates are varied such that the cyclosiloxane content is greatest in the middle

(thickness direction) whereas a linear siloxane content is greatest closer to the film surfaces. Though not expressly indicated by the claims, it is suspected that the dielectric constant of the film is, likewise, changing with the compositional gradient with the lowest dielectric constant occurring where the cyclosiloxane content is highest. WO 2005/071752, which does not qualify as prior art under any section of 35 U.S.C. 102, teaches the most closely related invention to that described by claims 2-6. This reference describes the preparation of gradient films using varying amounts of organosilicon precursor, oxidizing gas, and inert gas as the deposition proceeds. There is some suggestion in that disclosure (pages 7 and 8) that a combination of a cyclosiloxane precursor and a linear siloxane precursor may be used to make the gradient film thought it is appreciated that, in the Examples, only a cyclosiloxane gas is employed and its content is varied while the content of an inert gas and an oxidizing gas remains constant.

Desu et al., U.S. Patent # 6,495,208 contemplates making gradient films from a combination of a parylene polymer and cyclosiloxane. There is no mention of doing the same with a mixture of cyclosiloxane and linear siloxane.

The Examiner found numerous references that satisfy the limitations of claim 1. Only a couple were cited in the name of brevity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 11, 2006



MARC S. ZIMMER
PRIMARY EXAMINER